

What is claimed is:

1. A solid state silicon-based condenser microphone comprising

5  
 NS (X) a silicon transducer chip (1) including a backplate (13) and a diaphragm (12) arranged substantially parallel to each other, thereby forming an electrical capacitor, the diaphragm (12) being movable relative to the back-  
 10 plate (13) in response to incident sound,

NS (X) an integrated electronic circuit chip (3) electrically coupled to the transducer chip (1),

15 NS (X) an intermediate layer (2) fixing the transducer chip (1) to the integrated electronic circuit chip (3) in a spaced relationship, with the transducer chip (1) on a first side of the intermediate layer (2) and the integrated electronic circuit chip (3) on a second side of  
 20 the intermediate layer (2) opposite the first side, the intermediate layer (2) having a first through going opening (4, 10) between its first side and its second side giving access of sound to the diaphragm.

25 2. A condenser microphone according to claim 1 wherein the intermediate layer (2) on a surface thereof has electrical conductors (14) electrically connecting the transducer chip (1) to the integrated circuit chip (3).

30 3. A condenser microphone according to claim 2 wherein the intermediate layer (2) has a second through going opening (18) with a surface on which the electrical conductors (14) electrically connecting the transducer chip (1) to the integrated circuit chip (3) are situated.

4. A condenser microphone according to claim 1 wherein the opening (4) in the intermediate layer is covered with a film (5) sealing the opening (4) on the second side of the intermediate layer (2).

5

5. A condenser microphone according to claim 1 wherein a cavity (11) is provided in the transducer chip (1) on a side of the diaphragm (12) opposite the intermediate layer (2).

10

6. A condenser microphone according to claim 5 wherein the cavity (11) is a closed cavity.

15

7. A condenser microphone according to claim 2 wherein the integrated electronic circuit chip (3) has a surface including electronic circuits with said surface facing the intermediate layer (2).

20

8. A condenser microphone according to claim 1 wherein the intermediate layer (2) is a silicon-based chip.

09182668-103099